

REMARKS

Favorable reconsideration of this application, in view of the present amendment, and in light of the following discussion, is respectfully requested.

Claims 1, 3-10, 13-14, 16, 17 and 34 are pending in this application. Claims 1, 3-4 and 13-14 are amended.

Applicant acknowledges with appreciation the telephone interview granted the Applicant's representative on January 6, 2006. During the telephone interview, Applicant's representative discussed the pending claims with Examiner Grier. Primarily, Applicant's representative presented arguments as stated below that distinguish the claimed invention over the cited references. Examiner Grier indicated she would reconsider the rejections made in the October 19, 2005 Office Action upon submission of a formal response. Further, Examiner Grier acknowledged that claim 13 does further narrow claim 1 and indicated that the objection to claim 13 would be withdrawn upon formal submission of a response. Still further, Examiner Grier requested clarification regarding the "amplifier" in claim 1 as compared with the "preamplifier circuit" recited in the preamble of claim 1. In particular, Examiner Grier suggested amending claim 1 to recite, for example, "a series capacitor **connected to** an output of an electret condenser microphone and a DC input of an input amplifier stage of the preamplifier circuit," instead of "a series capacitor between an electret condenser microphone transducer output and a DC input of an amplifier."

Accordingly, claims 1, 3-4 and 13-14 are amended as suggested by the Examiner.

CLAIM OBJECTIONS

Claim 13 is objected to under 35 U.S.C. § 1.75(c) as being of improper dependent form for failing to limit the subject matter of the previous claim. However, as discussed in the telephone interview on January 6, 2006, claim 13 does further limit independent claim 1

in that dependent claim 13 recites “wherein the input impedance of the input amplifier stage is set as substantially equal to or greater than 100 GigaOhms,” whereas independent claim 1 recites “the input impedance of the input amplifier stage as substantially equal to or greater than 1 GigaOhm.”

Accordingly, Applicant respectfully requests that the objection to claim 13 be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Claims 1, 13, 14, 16 and 34 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the Examiner indicated Applicant’s admitted prior art (AAPA) (i.e., Fig. 1) in view of Dent (U.S. Patent No. 6,731,763, herein Dent) and further in view of Akino (U.S. Patent No. 6,453,048, herein Akino). Applicant respectfully traverses this rejection for the reasons detailed below.

Amended independent claim 1 recites a preamplifier circuit for amplifying an electrical signal from an electret condenser transducer including “**a series capacitor connected to an output of an electret condenser microphone and a DC input of an input amplifier stage of the preamplifier circuit**, wherein the input amplifier stage includes an input impedance circuit, including a pair of cross-coupled, small area PN junction diodes, which sets the input impedance of the input amplifier stage as substantially equal to or greater than 1 GigaOhm, wherein **the capacitor reduces current leakages by blocking a DC path from the output of the electret condenser microphone to the input amplifier stage.**”

As acknowledged by the Examiner on page 2, lines 18-20 of the Office Action mailed October 19, 2005, the Examiner alleged “AAPA fails to disclose a series coupled capacitor between the microphone output and the DC input of the amplifier; and a pair of PN junction diodes.” In light of this deficiency, the Examiner relies on Dent as disclosing “a microphone configuration wherein a capacitor (204) is coupled between the microphone output and the

DC input of an amplifier (figure 28(a)).” Further, the Examiner indicates “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of AAPA by incorporating a coupling capacitor for the purpose of blocking the DC voltage as taught by Dent (col. 12, lines 14-16), which reads on the series capacitor and reducing the current leakage, therein.”¹

Applicant respectfully submits that Dent is directed to a microphone system where an air electret condenser microphone (col. 11, line 65 to col. 12, line 4) is used to form a variable capacitor part of an oscillator circuit, thereby producing a frequency modulated signal in response to an acoustic signal picked up by the transducer. Further, as shown in Fig. 28(a) and referenced by the Examiner, capacitor (204) is connected between a first amplifier stage and second amplifier stage.

Accordingly, Applicant respectfully submits that Dent at least fails to disclose, teach or suggest “**a series capacitor connected to an output of an electret condenser microphone with a DC input of an input amplifier stage of the preamplifier circuit,**” as recited in amended independent claim 1.

Still further, Applicant respectfully submits that the above-interpretation of capacitor (204) as equivalent to the “series capacitor” recited in amended claim 1 is erroneous and contrary to the understanding of one skilled in the art at the time of the invention. More specifically, the Applicant respectfully submits that one skilled in the art would recognize that capacitor (204) shown in Fig. 28(a) of Dent is clearly placed after the DC input of the amplifier in Fig. 28(a). In particular, Applicant respectfully submits that one skilled in the art would recognize the DC input in Fig. 28(a) is located between piezoelectric element (208) and FET pre-amplifier (206). Applicant respectfully submits that because the capacitor (204) in Fig. 28(a) of Dent is placed after the DC input to FET pre-amplifier (206), the capacitor

¹ Office Action mailed October 19, 2005, page 3, lines 4-7.

(204) is unable to reduce leakage currents from the DC input of the pre-amplifier (206) where leakage current may be caused by the presence of a parasitic leakage resistance between the DC input and ground. Therefore, Applicant respectfully submits that Dent fails to disclose, teach or suggest that “**the capacitor reduces current leakages by blocking a DC path from the electret condenser microphone transducer to the input amplifier stage,**” as recited in amended independent claim 1.

Further, the Examiner relies on Akino as disclosing “a microphone output coupled to pair of diodes, which reads PN junction diodes.”

However, Applicant respectfully submits that Akino fails to cure the deficiencies of AAPA and Dent as described above with respect to the features of amended independent claim 1. In particular, Applicant respectfully submits that Akino at least fails to disclose, teach or suggest “a series capacitor connected to an output of an electret condenser microphone and a DC input of an input amplifier stage of the preamplifier circuit,” as recited in amended independent claim 1. Applicant respectfully notes that the capacitor (102) illustrated in Fig. 1 of Akino merely represents an electrostatic capacity of the condenser microphone portion (100).

In light of the above, Applicant respectfully requests that the rejection of claims 1, 13, 14, 16 and 34 under 35 U.S.C. § 103(a) as unpatentable over the Examiner alleged AAPA in view of Dent and further in view of Akino be withdrawn.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable over AAPA, Dent and Akino, in view of Garcia et al. (U.S. Patent No. 6,275,593, herein Garcia); claims 4-5 stand rejected under 35 U.S.C. § 103(a) as unpatentable over AAPA in view of Garcia; claims 6-10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over AAPA in view of Wang (U.S. Patent No. 6,448,599, herein Wang) and Sun et al. (U.S. Patent No. 5,930,584, herein Sun); and claim 17 stands rejected under 35 U.S.C. § 103(a) as unpatentable over

AAPA in view of Rombach et al. (U.S. Patent No. 6,088,463, herein Rombach). Applicant respectfully traverses these rejections for the reasons detailed below.

Claims 3-10, 13, 14, 16, 17, and 34 all depend from amended independent claim 1 and therefore include the features of claim 1.

The cited references of Garcia, Wang, Sun, and Rombach have been considered, but each of these secondary references fails to cure the deficiencies of AAPA and Dent as discussed above with respect to amended independent claim 1. More specifically, the cited references of Garcia, Wang, Sun, and Rombach at least fail to disclose, teach or suggest a preamplifier circuit for amplifying the electrical signal from an electret condenser microphone transducer including **“a series capacitor connected to an output of an electret condenser microphone and a DC input of an input amplifier stage of the preamplifier circuit,” “wherein the capacitor reduces current leakages by blocking a DC path from the electret condenser microphone to the input amplifier stage,”** as recited in amended independent claim 1.

Therefore, Applicant respectfully submits that dependent claims 3-10, 13, 14, 16, 17, and 34 all patentably distinguish over the cited references for at least the same reasons that amended independent claim 1 patentably distinguishes over the primary references of AAPA and Dent.

Therefore, Applicant respectfully submits that AAPA Dent, Garcia, Wang, Sun, and Rombach, either alone or in any proper combination, fail to disclose, teach, or suggest at least the above-emphasized features of independent claim 1. Therefore, Applicant respectfully requests that the rejection to independent claim 1 and claims 3-10, 13, 14, 16, 17, and 34 depending therefrom under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and allowance of each of claims 1, 3-10, 13-14, 16-17 and 34 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John A. Castellano at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By

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